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inconspicuous. In addition, by determining the existence probability by performing the statistical processing for the evaluation reference value, deterioration of the reliability of the existence probability due to effects of noise of the obtained images can be decreased.

In addition, according to this embodiment, even by an apparatus having low processing performance such a generally used personal computer, each two-dimensional image can be generated at high speed.

[Fifth embodiment]

Next, the fifth embodiment of the present invention is described. The fifth embodiment mainly corresponds to claims ⁴⁴⁻⁴⁸~~44-53~~. In the fifth embodiment, the three-dimensional shape of the object is obtained from plural images obtained by taking the object under different taking conditions. Then, the three-dimensional image of the object is displayed on a display, like a DFD, including plural display planes based on the three-dimensional shape of the object. In the fifth embodiment, processing of the parameter fitting described in the fourth embodiment is not performed. In figures for explaining the fifth embodiment, the same signs are assigned to components having the same function.

When obtaining the three-dimensional shape of the object, projection planes of the multi-layered structure are set in a virtual three-dimensional space, and for points (projection points), on plural projection planes, that overlap when viewed from the observer's viewpoint, color information or brightness information of each projection point, and probability (existence probability) that the surface of the object exists on the projection point are determined. Then, when

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